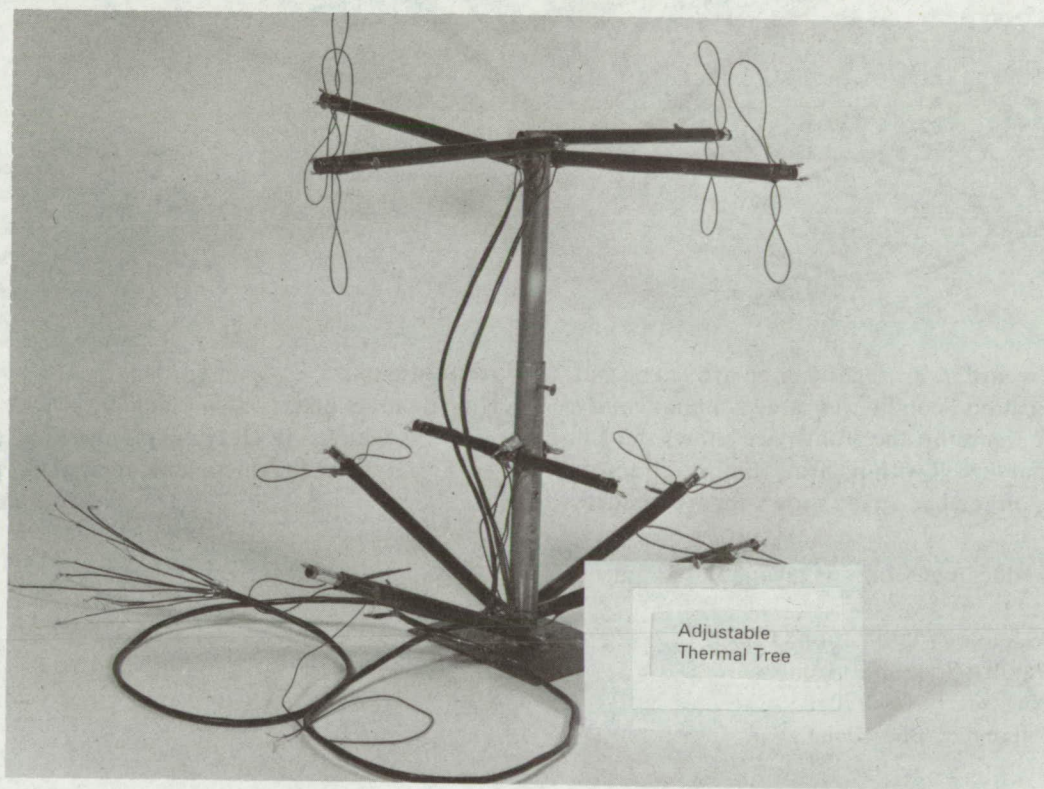


# NASA TECH BRIEF



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## Adjustable Thermal "Tree"



### The problem:

To provide a reliable heat profile of conditions within heat treating devices such as ovens and autoclaves and within environmental test chambers. Such devices must be calibrated periodically to ensure their performance reliability.

### The solution:

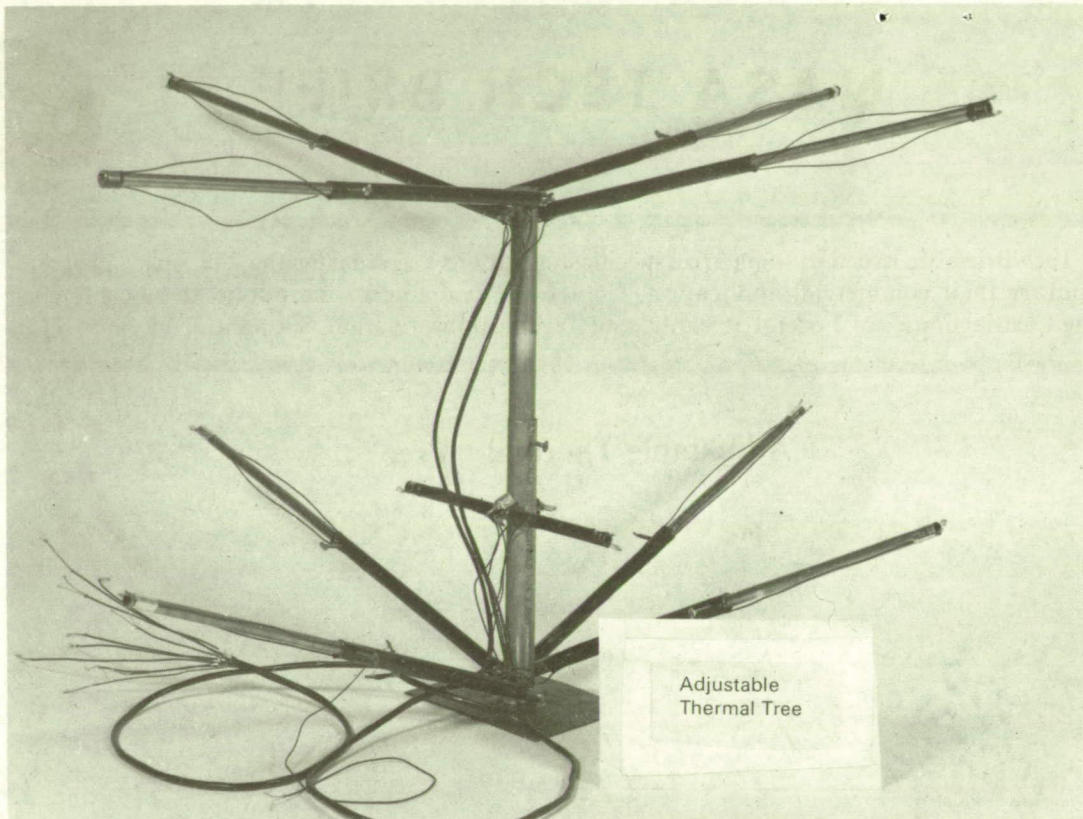
An adjustable thermal "tree" that mounts a total of 10 thermocouples on extensible arms in such a way

that the interior of heating ovens, etc. can be monitored for average temperature over the 10 points and hot spot location.

### How it's done:

The thermal "tree" is placed inside the oven or other device to be monitored and its arms extended to bring the ten thermocouples within the desired areas. The lead wires are brought out of the enclosure and attached to a multichannel strip chart recorder. By

(continued overleaf)



means of the recorder, averages can be arrived at and individual location conditions are simultaneously apparent. The figure on the front page shows the adjustable thermal "tree" with its arms (limbs) retracted, and the figure on the back page shows them extended.

**Note:**

No further documentation is available. Inquiries may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center  
Houston, Texas 77058  
Reference: B69-10484

**Patent status:**

No patent action is contemplated by NASA.

Source: B. H. Hawkins and B. H. Appel of  
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